RAW SEQUENCE LISTING   DATE: 03/18/2002
PATENT APPLICATION: US/09/749,601A   TIME: 14:45:17

Input Set : A:\00069.JHU.SEQ.TXT
Output Set: N:\CRF3\03182002\I749601A.raw

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 4 <110> APPLICANT: Nicolaides, Nicholas
 5        Grasso, Luigi
 6        Sass, Philip
 7        Kinzler, Kenneth
 8        Vogelstein, Bert
10 <120> TITLE OF INVENTION: A method for generating hypermutable
11        plants
13 <130> FILE REFERENCE: 01107.00069
15 <140> CURRENT APPLICATION NUMBER: 09/749,601A
16 <141> CURRENT FILING DATE: 2000-12-28
18 <150> PRIOR APPLICATION NUMBER: 60/183,333
19 <151> PRIOR FILING DATE: 2000-02-18
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49 gagttagtag aaaacagtct ggatgctggt gccactaata ttgatctaaa gcttaaggac   180
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51 gaaggcttaa ctctgaaaca tcacacatct aagattcaag agtttgccga cctaactcag   300
52 gttgaaactt ttggctttcg ggggggaagct ctgagctcac tttgtgcact gagcgatgtc   360
53 accatttcta cctgccacgc atcggcgaag gttggaactc gactgatgtt tgatcacaat   420
54 gggaaaatta tccagaaaac cccctacccc cgccccagag ggaccacagt cagcgtgcag   480
55 cagtattttt ccacactacc tgtgcgccat aaggaatttc aaaggaatat taagaaggag   540
56 tatgccaaaa tggtccaggt cttacatgca tactgtatca tttcagcagg catccgtgta   600
57 agttgcacca atcagcttgg acaaggaaaa cgacagcctg tggtatgcac aggtggaagc   660
58 cccagcataa aggaaaatat cggctctgtg tttgggcaga agcagttgca aagcctcatt   720
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RAW SEQUENCE LISTING
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DATE: 03/18/2002
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61 ggaaggagtt caacagacag acagtttttc tttatcaacc ggcggccttg tgacccagca    900
62 aaggtctgca gactcgtgaa tgaggtctac cacatgtata atcgacacca gtatccattt    960
63 gttgttctta acatttctgt tgattcagaa tgcgttgata tcaatgttac tccagataaa   1020
64 aggcaaattt tgctacaaga ggaaaagctt ttgttggcag ttttaaagac ctctttgata   1080
65 ggaatgtttg atagtgatgt caacaagcta aatgtcagtc agcagccact gctggatgtt   1140
66 gaaggtaact taataaaaat gcatgcagcg gatttggaaa agcccatggt agaaaagcag   1200
67 gatcaatccc cttcattaag gactggagaa gaaaaaaaag acgtgtccat ttccagactg   1260
68 cgagaggcct tttctcttcg tcacacaaca gagaacaagc ctcacagccc aaagactcca   1320
69 gaaccaagaa ggagccctct aggacagaaa aggggtatgc tgtcttctag cacttcaggt   1380
70 gccatctctg acaaaggcgt cctgagacct cagaaagagg cagtgagttc cagtcacgga   1440
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72 gtggattctg aggggttcag catcccagac acgggcagtc actgcagcag cgagtatgcg   1560
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74 gaaactgacg actctttttc agatgtggac tgccattcaa accaggaaga taccggatgt   1680
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79 ggggaacaga attacaggaa gtttagggca aagatttgtc ctggagaaaa tcaagcagcc   1980
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81 cagtttaacc tgggatttat aataaccaaa ctgaatgagg atatcttcat agtggaccag   2100
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86 caggacgtcg atgaactgat cttcatgctg agcgacagcc ctggggtcat gtgccggcct   2400
87 tcccgagtca agcagatgtt tgcctccaga gcctgccgga agtcggtgat gattgggact   2460
88 gctcttaaca caagcgagat gaagaaactg atcacccaca tgggggagat ggaccacccc   2520
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100 gtcaaggagc ttgtcgagaa tagtctcgac gccggcgcca ccagtataga gattaacctc    180
101 cgagactacg gcgaagacta ttttcaggtc attgacaatg gttgtggcat ttccccaacc    240
102 aatttcaagg tttgtgtcca aattctccga agaacttttg atgttcttgc acttaagcat    300
103 catacttcta aattagagga tttcacagat cttttgaatt tgactactta tggtttttaga    360
104 ggagaagcct tgagctctct ctgtgcattg ggaaatctca ctgtggaaac aagaacaaag    420
105 aatgagccag ttgctacgct cttgacgttt gatcattctg gtttgcttac tgctgaaaag    480
106 aagactgctc gccaaattgg taccactgtc actgttagga agttgttctc taatttacct    540
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108 ttgaacgcat atgcgcttat tgcgaaagga gtgcggtttg tctgctctaa cacgactggg    660
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112 ttggtgaatg agttatataa agatacaagt tctcggaaat atccagttac cattctggat   900
113 tttattgtgc ctggtggagc atgtgatttg aatgtcacgc ccgataaaag aaaggtgttc   960
114 ttttctgacg agacttctgt tatcggttct ttgagggaag gtctgaacga gatatattcc  1020
115 tccagtaatg cgtcttatat tgttaatagg ttcgaggaga attcggagca accagataag  1080
116 gctggagttt cgtcgtttca gaagaaatca aatcttttgt cagaagggat agttctggat  1140
117 gtcagttcta aaacaagact aggggaagct attgagaaag aaaatccatc cttaagggag  1200
118 gttgaaattg ataatagttc gccaatggag aagtttaagt ttgagatcaa ggcatgtggg  1260
119 acgaagaaag gggaaggttc tttatcagtc catgatgtaa ctcaccttga caagacacct  1320
120 agcaaaggtt tgcctcagtt aaatgtgact gagaaagtta ctgatgcaag taaagacttg  1380
121 agcagccgct ctagctttgc ccagtcaact ttgaatactt ttgttaccat gggaaaaaga  1440
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123 agttatcgtg tggagaaaag caaatttgaa gttcgtgcct tagcttcaag gtgtctcgtg  1560
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149 gttgaaactt ttggcttcg ggggggaagct ctgagctcac tttgtgcact gagcgatgtc   360
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160 gtcaaggagc ttgtcgagaa tagtctcgac gccggcgcca ccagtataga gattaacctc   180
161 cgagactacg gcgaagacta ttttcaggtc attgacaatg gttgtggcat ttccccaacc   240
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169 <212> TYPE: DNA
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193 Glu Glu Ser Val Val Asn Arg Ile Ala Ala Gly Glu Val Ile Gln Arg
194          35                  40                  45
195 Pro Val Ser Ala Val Lys Glu Leu Val Glu Asn Ser Leu Asp Ala Asp
196      50                  55                  60
197 Ser Ser Ser Ile Ser Val Val Val Lys Asp Gly Gly Leu Lys Leu Ile
198 65                  70                  75                  80
199 Gln Val Ser Asp Asp Gly His Gly Ile Arg Arg Glu Asp Leu Pro Ile
200              85                  90                  95
201 Leu Cys Glu Arg His Thr Thr Ser Lys Leu Thr Lys Phe Glu Asp Leu
202              100                 105                 110
203 Phe Ser Leu Ser Ser Met Gly Phe Arg Gly Glu Ala Leu Ala Ser Met
204          115                 120                 125
205 Thr Tyr Val Ala His Val Thr Val Thr Thr Ile Thr Lys Gly Gln Ile
206      130                 135                 140
207 His Gly Tyr Arg Val Ser Tyr Arg Asp Gly Val Met Glu His Glu Pro
208 145                 150                 155                 160
209 Lys Ala Cys Ala Ala Val Lys Gly Thr Gln Ile Met Val Glu Asn Leu
210              165                 170                 175
211 Phe Tyr Asn Met Ile Ala Arg Arg Lys Thr Leu Gln Asn Ser Ala Asp
212              180                 185                 190
213 Asp Tyr Gly Lys Ile Val Asp Leu Leu Ser Arg Met Ala Ile His Tyr
214          195                 200                 205
215 Asn Asn Val Ser Phe Ser Cys Arg Lys His Gly Ala Val Lys Ala Asp
216      210                 215                 220
217 Val His Ser Val Val Ser Pro Ser Arg Leu Asp Ser Ile Arg Ser Val
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220                    245                    250                    255
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222         260                    265                    270
223 Ser Asn Tyr Val Ala Lys Lys Thr Ile Leu Val Leu Phe Ile Asn Asp
224         275                    280                    285
225 Arg Leu Val Glu Cys Ser Ala Leu Lys Arg Ala Ile Glu Ile Val Tyr
226         290                    295                    300
227 Ala Ala Thr Leu Pro Lys Ala Ser Lys Pro Phe Val Tyr Met Ser Ile
228 305                    310                    315                    320
229 Asn Leu Pro Arg Glu His Val Asp Ile Asn Ile His Pro Thr Lys Lys
230                    325                    330                    335
231 Glu Val Ser Leu Leu Asn Gln Glu Ile Ile Ile Glu Met Ile Gln Ser
232         340                    345                    350
233 Glu Val Glu Val Lys Leu Arg Asn Ala Asn Asp Thr Arg Thr Phe Gln
234         355                    360                    365
235 Glu Gln Lys Val Glu Tyr Ile Gln Ser Thr Leu Thr Ser Gln Lys Ser
236         370                    375                    380
237 Asp Ser Pro Val Ser Gln Lys Pro Ser Gly Gln Lys Thr Gln Lys Val
238 385                    390                    395                    400
239 Pro Val Asn Lys Met Val Arg Thr Asp Ser Ser Asp Pro Ala Gly Arg
240                    405                    410                    415
241 Leu His Ala Phe Leu Gln Pro Lys Pro Gln Ser Leu Pro Asp Lys Val
242         420                    425                    430
243 Ser Ser Leu Ser Val Val Arg Ser Ser Val Arg Gln Arg Arg Asn Pro
244         435                    440                    445
245 Lys Glu Thr Ala Asp Leu Ser Ser Val Gln Glu Leu Ile Ala Gly Val
246         450                    455                    460
247 Asp Ser Cys Cys His Pro Gly Met Leu Glu Thr Val Arg Asn Cys Thr
248 465                    470                    475                    480
249 Tyr Val Gly Met Ala Asp Asp Val Phe Ala Leu Val Gln Tyr Asn Thr
250                    485                    490                    495
251 His Leu Tyr Leu Ala Asn Val Val Asn Leu Ser Lys Glu Leu Met Tyr
252         500                    505                    510
253 Gln Gln Thr Leu Arg Arg Phe Ala His Phe Asn Ala Ile Gln Leu Ser
254         515                    520                    525
255 Asp Pro Ala Pro Leu Ser Glu Leu Ile Leu Leu Ala Leu Lys Glu Glu
256         530                    535                    540
257 Asp Leu Asp Pro Gly Asn Asp Thr Lys Asp Asp Leu Lys Glu Arg Ile
258 545                    550                    555                    560
259 Ala Glu Met Asn Thr Glu Leu Leu Lys Glu Lys Ala Glu Met Leu Glu
260                    565                    570                    575
261 Glu Tyr Phe Ser Val His Ile Asp Ser Ser Ala Asn Leu Ser Arg Leu
262         580                    585                    590
263 Pro Val Ile Leu Asp Gln Tyr Thr Pro Asp Met Asp Arg Val Pro Glu
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